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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,552	07/16/2004	Alessandro Barazzetti	2004-1123A	4867

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WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER
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NGUYEN, THU V

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/501,552

**Applicant(s)**

BARAZZETTI, ALESSANDRO

**Examiner**

Thu Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/16/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. *Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading.* If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Specifically, the specification does not disclose the detail set forth in lines 2-3 of claim 11: “it introduces a geometric inequality ...the phase difference”.

### ***Claim Objections***

2. Claim 4 is objected to because of the following informalities:

In claim 4, lines 2-3, the claimed “the said attitude data” should be corrected to “said attitude data”.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. In claim 1, line 5, the claimed “coming from said acquisition card (S, C)” is ambiguous, the data acquisition card does not seem to provide the attitude and angular velocities data.
- b. In claim 1, line 6, the claimed “provides data relating to, an air craft” is ambiguous. It is not clear how the data relating to the board instrument aircraft is obtained, the data does

- not seems to be previously inputted or processed by the data acquisition card;  
furthermore, the claimed “the board instruments” lacks of antecedent basis.
- c. In claim 1, line 7, the claimed “visualization means of said data .... The board instruments” lacks of connection with other elements in the claim, furthermore, the statement does not seem to be a complete sentence.
- d. In claim 10, line 7, the claimed “visualizing said board instruments of an aircraft” does not seems to be accurate, is it the “board instruments”, or is it the data provided by the “board instruments” that should be visualized?
- e. Other claims are rejected as being dependent on the rejected base claims

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheikh et al (US 6,088,653) in view of Margolin (US 5,566,073).

As per claim 1, 4, Sheikh teaches a modular instrumentation system, the system comprises: four antenna and four GPS receivers (col.5, lines 3-4) that provides output of attitude data (col.5, lines 35-41); data acquisition card that receives and processes and processes the attitude data (col.5, lines 37-44) and provides data relating to the board instruments (col.4, lines

55-58). Sheikh does not explicitly disclose that the receiver provide angular velocities, memorizing the data, and does not teach visualization means. However, storing data in a memory would have been well known. Furthermore, using GPS receivers for providing angular velocities would have been known as taught by Bevly (para 0031-0034), moreover, Margolin teaches visualization means for visualizing data relating to the board instruments (col.6, lines 41-46). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the receivers of Sheikh to provide the angular velocities as suggested by Bevly and to present the data relating to the board instruments as taught by Margolin in order to facilitate reporting the data measured by the board instruments to the pilot.

As per claim 3, Margolin teaches turn and bank indicator 102 (fig.1) and gyrocompass 103 (fig.1).

As per claim 5-8, including recorder for logging measurement data and the date, the time recording at predetermined interval, including a mobile telephone for wireless communication with a remote center and connecting an accelerometer to a mobile phone for activating the mobile phone to transmit data when the acceleration indicates an accident, including inertial sensors such as position sensor of the throttle, fuel level indicator sensor, position sensors of the mobile surfaces, and actuators of the surfaces would have been well known.

As per claim 9, Margolin teaches integrating the measurement data with terrain data (col.6, lines 41-46), furthermore, displaying position data onto a digital map would have been well known.

7. Claims 2, 10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheikh et al (US 6,088,653) in view of Margolin (US 5,566,073) and further in view of Groves (US 6,900,760).

As per claim 2, Groves teaches taking statistic information by calculating average values of measurement data (col.3, lines 55-58). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to uses average measurement data such as the attitude and the velocities of the aircraft of Sheikh as suggested by Groves in order to reduces error.

As per claim 10, refer to claims 1-2 above.

As per claim 12, using extended Kalman fileter for eliminating errors caused by multipaths would have been well known.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheikh et al (US 6,088,653) in view of Margolin (US 5,566,073) and further in view of Schleppe ("development

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of a real time attitude system using a quaternion parameterization and non dedicated GPS receivers", Department of Geomatics Engineering, July 1996) (enclosed IDS).

As per claim 11, Schleppe teaches introducing geometric inequality to reduce search space (page 79, last paragraph; page 80, lines 1-5); utilizing a group loss function (area outside the search volumes) to select a solution (page 77, page 80, lines 1-8), moreover, controlling covariant matrix of the errors for controlling solution would have been known.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Nguyen whose telephone number is (571) 272-6967. The examiner can normally be reached on T-F (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 8, 2005



**THU V. NGUYEN**  
**PRIMARY EXAMINER**